Addendum to the Feasibility Study Report for the North Sanitary Landfill, a/k/a Valleycrest, Superfund Site, in North Dayton, Ohio, EPA ID# OHD980611875

Prepared by U.S.EPA, Region 5

I. Background: On April 22, 2011, pursuant to a 1995 Director's Final Findings and Orders, the Ohio Environmental Protection Agency (Ohio EPA) approved the March 2011 Feasibility Study Report (FS Report) that Conestoga-Rovers & Associates (CRA) submitted on behalf of the Valleycrest Landfill Site Group (VLSG). On September 2, 2011, Ohio EPA terminated the January 31, 1995 Director's Final Findings and Orders. The U.S. Environmental Protection Agency (EPA) is currently the lead agency for the North Sanitary Landfill, a/k/a Valleycrest, Superfund Site, in North Dayton, Ohio, EPA ID# OHD980611875 (the Site).

II. Purpose: The purpose of this addendum is to: (a) correct and clarify the sections in the FS Report as it applies to applicable or relevant and appropriate requirements (ARARs) under the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA) and (b) revise the remedial option discussion to address the corrections and clarifications to the ARARs.

This document will serve as a basis for EPA's proposed cleanup plan and as such should be read in conjunction with the FS Report.

III. Corrections and clarifications to RCRA and TSCA ARARs:

a. RCRA Capping Requirements are ARARs for this Site

As described in the FS, the Site includes five former disposal areas. Based on the nature of the waste and the time of disposal, for purposes of EPA's RCRA analysis, the Site is considered as two separate Areas of Concern (AOC): (1) the eastern two-thirds of the Site, which includes former disposal areas 1, 2, and 5, is AOC #1 and (2) the western third of the Site, which includes former disposal areas 3 and 4, is AOC #2.

In section 2.4 of the FS Report, CRA states that both State and Federal RCRA requirements pertaining to hazardous waste landfills and hazardous waste facilities:

> were reviewed, but were concluded to not be ARARs because it is anticipated that management of identified hazardous materials may include transportation off site for treatment and/or disposal for the selected remedy.

See page 25 of the FS Report. Nevertheless, none of the remedial options in the FS Report provide for off-site treatment and/or disposal of all of the material exhibiting the toxicity characteristic of RCRA hazardous waste. Toxicity is defined through a laboratory procedure called the Toxicity Characteristic Leaching Procedure (TCLP) (EPA Test Method 1311).

EPA reviewed both the Federal and State hazardous landfill requirements set forth at 40 C.F.R. Part 267 and OAC 3745-57-03 through 06 and 3745-68-05, respectively, in terms of their applicability, relevance and appropriateness to this Site. Because records indicate that the former operators of the landfill accepted waste contaminated with high levels of RCRA constituents before 1980 and RCRA characteristic waste after 1980 in former disposal areas 3 and 4, EPA finds that RCRA hazardous waste landfill cap requirements are applicable to the remedial alternatives that do not provide for treatment or offsite disposal of RCRA characteristic waste.

Similarly, former disposal areas 1, 2, and 5, which received waste contaminated with high levels of RCRA constituents before 1980, EPA finds that RCRA hazardous waste landfill cap requirements are relevant and appropriate requirements for remedial alternatives that do not provide for treatment or offsite disposal of waste found above the water table that exhibits the RCRA characteristic of toxicity

EPA has authorized Ohio's RCRA program, accordingly the requirements set forth at OAC 3745-57-03 through 06 and 3745-68-05 are the ARARs that must be followed or waived for purposes of implementing remedial alternatives that leave RCRA characteristic waste or waste exhibiting the characteristic of toxicity found above the water table in place.

Section IV below provides EPA's corrections and clarifications to the remedial alternatives. In sum, these corrections and clarifications allow for further identification of waste exhibiting the toxicity characteristic of RCRA hazardous waste and either (a) removal and/or treatment that waste or (b) installation of a cap and leachate collection system that will meet landfill closure elements required under OAC 3745-57-03 through 06 and 3745-68-05.

b. TSCA Disposal Requirements are ARARs for this Site

All of the remedy alternatives in the FS report provide for the land disposal of polychlorinated biphenyl (PCB) contaminated waste at levels of 50 ppm and above. EPA finds

that TSCA's risk-based disposal requirements set forth at 40 C.F.R. § 761.61(c) are applicable to each of the proposed remedies and therefore 40 C.F.R. § 761.61(c) is an ARAR here.

Section V below describes the TSCA risk-based disposal options for each of the remedy alternatives provided in the FS report.

IV. Contingencies for Series 2 Alternatives that comply with RCRA requirements for waste-in-place remedial options:

Section 4.1.2 of the FS Report identifies 16 hot spots at former disposal areas 1, 2 and 5, and proposes to leave those hot spots in place. Including the 16 hot spots identified in Section 4.1.2, sampling data indicates that a total of 17 grid locations and one test pit location contain contamination exhibiting the toxicity characteristic of RCRA hazardous waste. These sampling results are available at Section 4.1.6 and Appendix A of the Remedial Investigation Report. All but two of these grid locations are below the water table. Sixteen grid locations are present in former disposal areas 1, 2 and 5 at depths above the water table. Based on the application of the 20 times rule, which is often used in lieu of TCLP testing to rule out material above the water table from consideration as a RCRA characteristic waste, EPA finds that leaving that material in place without a subtitle C cap does not meet the ARARs identified for this Site. TCLP sampling may be performed at these locations to determine if the results exceed not to exhibit the toxicity characteristic standards for RCRA hazardous waste. The precise locations of the hot spots along with the respective contaminant concentration are described in Figure 4-11 of the RI Report.

For the waste located below the water table that exhibits the toxicity characteristic of RCRA hazardous waste and placed after 1980, EPA finds that a CERCLA waiver of a cap may be appropriate because the combination of landfill capping described in the FS report series 2 alternatives combined with the leachate extraction will attain an equivalent standard of performance. See sub paragraph (b) below for the state RCRA cap specifications.

For areas with waste located below the water table and disposed prior to 1980, RCRA Subtitle C closure requirements would be considered relevant but not appropriate, because the decreased permeability afforded by a RCRA Subtitle C cap would not be effective with the waste already in contact with the groundwater.

In addition, any attempts to remove the contamination below the water table may mobilize groundwater contamination or results in additional risks to workers or the surrounding community. It would also generate large quantities of water that would require treatment and disposal which otherwise would be collected by the leachate collection system.

Sampling results at former disposal area 3, indicate 10 locations that contain RCRA contaminants at actionable levels based on the 20 times rule, as described above. The precise locations of these samples along with the respective contaminant concentration are described in Figure 4-11 of the RI Report. The sampling data to date indicates that former disposal area 4 does not contain RCRA characteristic waste, however, in accordance with the ARA R discussion and table set forth in the FS Report for former disposal area 4, the entity implementing the remedy at this Site:

> Will meet the substantive requirements by including detailed procedures in the 95% Design document and RAWP for testing of materials generated during the remedial action. Management of identified hazardous materials may include transportation off site for treatment and/or disposal

See Table 5.1 of the FS Report.

(a) Excavation and off-site disposal

In each of the disposal areas described in Section IV above, the Party implementing the remedy will excavate soil from each grid location above the water table from an area approximately 100 feet by 100 feet by 2 feet deep. This is an estimate based on the 2 foot depth interval used for each sample composite. This material will be sent off-site to a TSCA landfill for PCBs and a RCRA landfill for TCLP exceedances.

Consistent with removal and remedial activities at other Sites, for example the OMC site in Waukegan, Illinois, EPA expects that excavation and offsite disposal of soil as TSCA or RCRA waste to cost approximately $150,000 per hot spot location for an estimated volume of 1,000 tons.

(b) Subtitle C cap

For reasons of cost effectiveness and implementation, if EPA determines that complete excavation of the RCRA waste is not implementable or cost effective, RCRA waste in Area 3 may be left on-Site and covered by a Subtitle C cap as part of the final remedy for the Site.

Pursuant to Ohio EPA's policy "Final Covers For Hazardous Waste Surface Impoundments, Waste Piles And Landfills" (2000), Ohio's RCRA hazardous waste landfill cap should consist of: (1) a vegetated cover layer (typically 6 inches thick); (2) a cap protection layer (typically 12 inches thick); (3) soil drainage layer (12 inches minimum thickness with a maximum permeability of 1 x 10(-2) cm/sec) OR a geosynthetic drainage layer (requires 30 inch frost protection); and (4) a flexible membrane liner (minimum 40 mil thickness recompacted clay (24 inches-maximum permeability of 1 x 10(-7) cm/sec)). Using the capital cost estimates from the Ohio EPA approved FS, adding the cost of the extra clay to comply with Subtitle C requirements, would increase the overall cap costs by approximately $500,000. This increase is minimal when compared to the existing present worth cost for the solid waste cap and is well within the FS cost estimate range of +50/-30%, which serves as the basis for all FS cost estimates pursuant to EPA guidance. See EPA/540/G-89/004OSWER Directive 9355.3-01October 1988 Guidance to conducting remedial investigation and feasibility studies.

V. TSCA Risk-based disposal: TSCA governs the disposal of specific chemicals including PCBs. TSCA regulations set forth at 40 C.F.R. § 761.61(c) provide a process that can be used in Superfund cleanups to allow on-site disposal of PCB remediation wastes. This process is commonly referred to as risk-based disposal.

EPA Region 5's regional TSCA delegation 12-5 provides the Director of the Superfund Division with the authority, subject to consultation with the director of the Land and Chemical Division, to approve or deny applications for risk-based sampling, cleanup, storage, decontamination, or disposal of PCBs.

In the context of selecting a remedy for a Superfund site that includes the risk-based disposal of PCB contaminated material, the elements of a risk-based disposal application are typically found within the FS Report, the proposed plan or stand alone in the risk-based disposal memo.

The requisite elements on which EPA can base its decision that on-site disposal of PCB material "will not pose an unreasonable risk of injury to health or the environment" (40 C.F.R. § 761.61(c)(2)) are found at 40 C.F.R. 761.61(a)(3) and, briefly stated, include:

(a) the nature of the contamination, including kinds of materials contaminated.

(b) a summary, including sample collection and analysis dates, of the procedures used to sample contaminated and adjacent areas and a table or cleanup site map showing PCB concentrations measured in all pre-cleanup characterization samples.

(c) The location and extent of the identified contaminated area, including topographic maps with sample collection sites cross referenced to the sample identification numbers in the data summary from paragraph (a)(3)(i)(B) of this section.

(d) A cleanup plan for the site, including schedule, disposal technology, and approach—including, contingencies for unanticipated higher concentrations or wider distributions of PCB remediation waste.

Information pertinent to sub paragraphs (a) through (c) directly above is available in the Remedial Investigation Report and its appendices, see Section 4.1.6, 4.2, and Appendix A of the RI report.

None of the remedy options provided in the FS Report could be approved for risk-based disposal under 40 C.F.R. §761.61(c). Section VI of this addendum provides corrections and clarifications to remedy alternatives 2A and 2B to allow EPA to approve for the on-site disposal of PCB remediation waste found at the Site.

VI. TSCA compliant waste in place remedial options: Consistent with EPA guidance and other EPA Records of Decision that allow for on-site disposal of PCB contaminated material at levels at or greater than 50 ppm, EPA finds that none of the alternatives as currently written in the FS Report would comply with TSCA regulations.

RI sampling showed six samples that exceeded 50 ppm. One sample (FLUT-72) contained PCB-1242 at a concentration of 950 ppm, which exceeds the removal threshold of 500 ppm. This sample location will be removed and disposed of offsite in a TSCA landfill. Confirmation sampling will be completed after sample removal to demonstrate that residual PCB contamination is below 50 ppm. Sampling at the other 5 locations showed the following concentrations, which also exceed 50 ppm. (FLUT-70 (PCB-1248 at 69 ppm), FLUT-78 (PCB 1221 at 46 ppm and PCB-1260 at 78 ppm), FLUT-96 (PCB-1254 at 190 ppm), FLUT-110 (PCB-1242 at 100 ppm) and FLUT-116 (PCB-1248 at 69 ppm). Samples at FLUT-70, FLUT-110 and

FLUT-116 are located above the water table. The other two locations (FLUT-78 and FLUT-96) may are located at depths near or below the water table.

EPA concludes that material contaminated with PCBs at levels of 50 ppm and greater found above the water table must be excavated and disposed of offsite at a TSCA landfill in order for a risk-based disposal to be approved for the Series 2 and 3 alternatives. Because the leachate collection system will contain and treat any PCB contaminated water, a remedy that leaves in place PCB contamination below the water table would only require a Subtitle D landfill cap and a leachate collection to satisfy the TSCA risk-based disposal requirement that the method of disposal will not pose an unreasonable risk of injury to health or the environment.

In addition, any attempts to remove the contamination below the water table may mobilize groundwater contamination or results in additional risks to workers or the surrounding community. It would also generate large quantities of water that would require treatment and disposal which otherwise would be collected by the leachate collection system.

The plan for cleanup of this TSCA material will be summarized in EPA's Record of Decision for the site. The specifics of the plan, including the implementation schedule will be detailed in the final remedial design and the work plan for remedial action. The details on how this will be achieved and implemented will be included in the Consent Decree and Statement of Work for RD/RA, which is not available at this time.